



Program Executive Officer (PEO)
C4I and Space

Meeting FORCEnet Requirements: An Acquisition Community perspective

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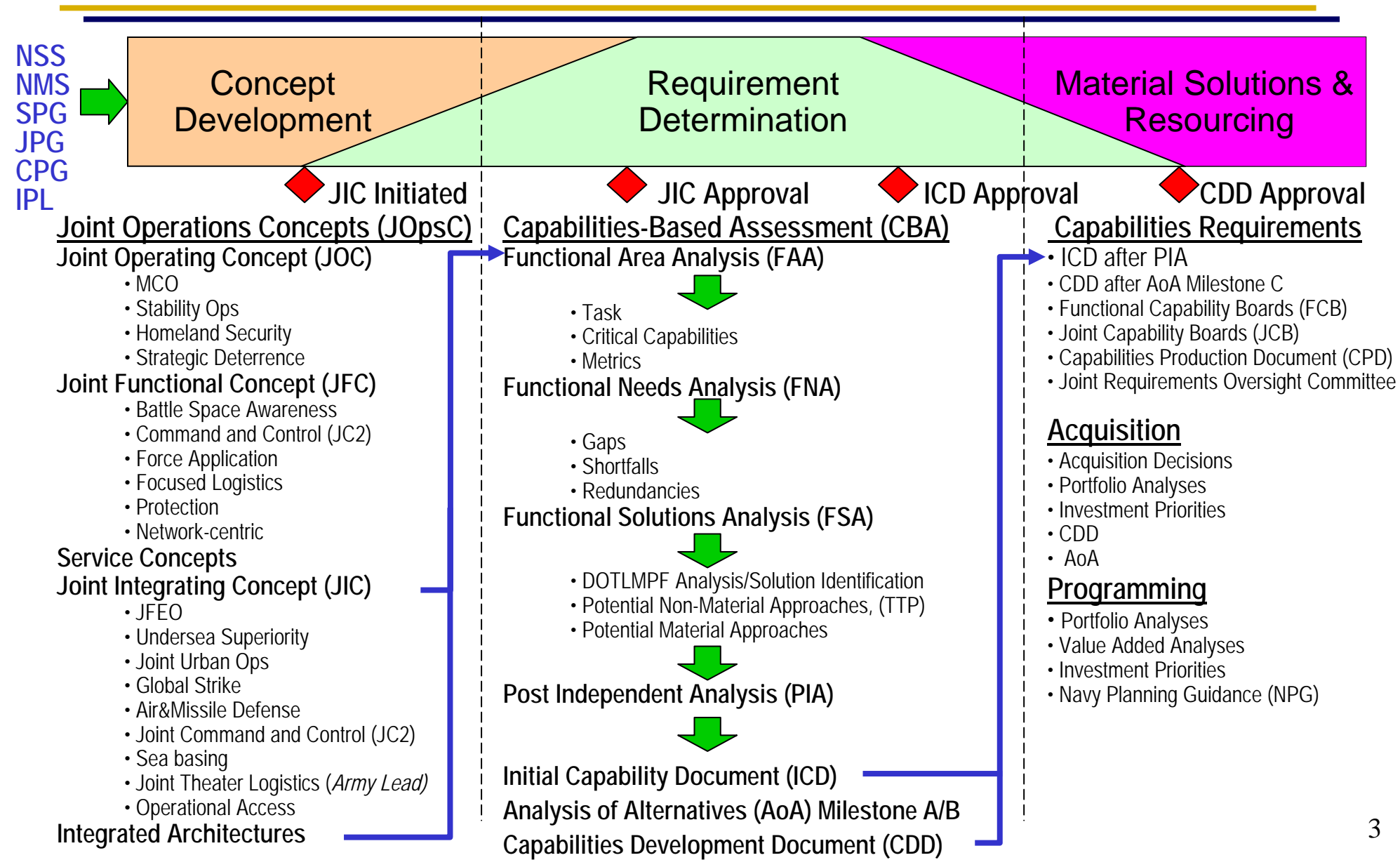
“Requirements” Defined

- ❖ In the acquisition community, there are many “requirements” that affect how we do business:
 - Requirements as capability needs => JCIDS
 - Requirements as resources => NCDP/POM
 - Requirements as Fleet feedback => OAGs, Naval Messages
 - Requirements as technical specifications => KPPs, NCOW-RM
 - Requirements as development/procurement guidelines => NESI
 - Requirements as modernization process decisions => C5IMP, SHIPMAIN

“Requirements” is one of the most over-used terms in the DoD and means many things to many people

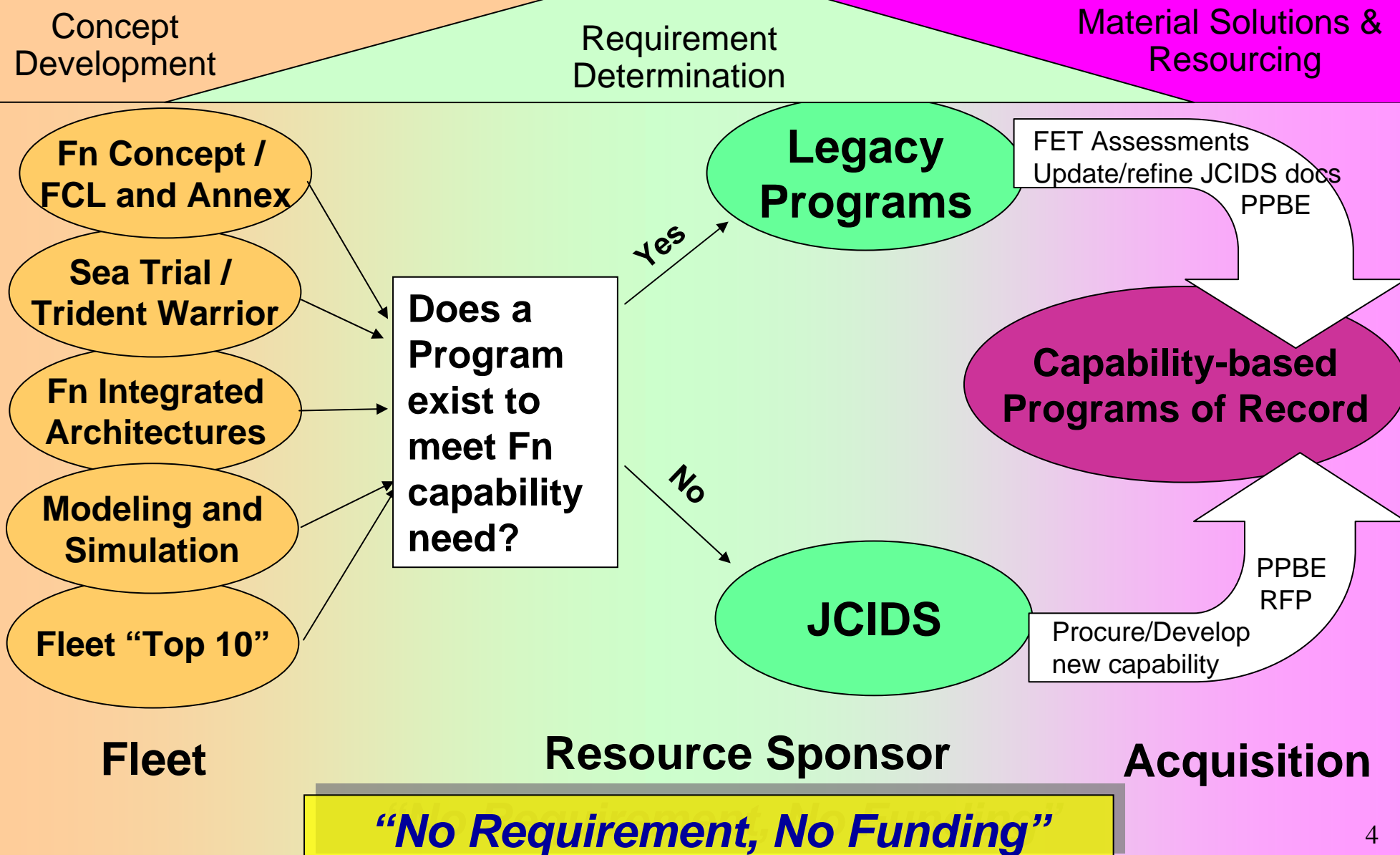


JCIDS: Concept to Capability



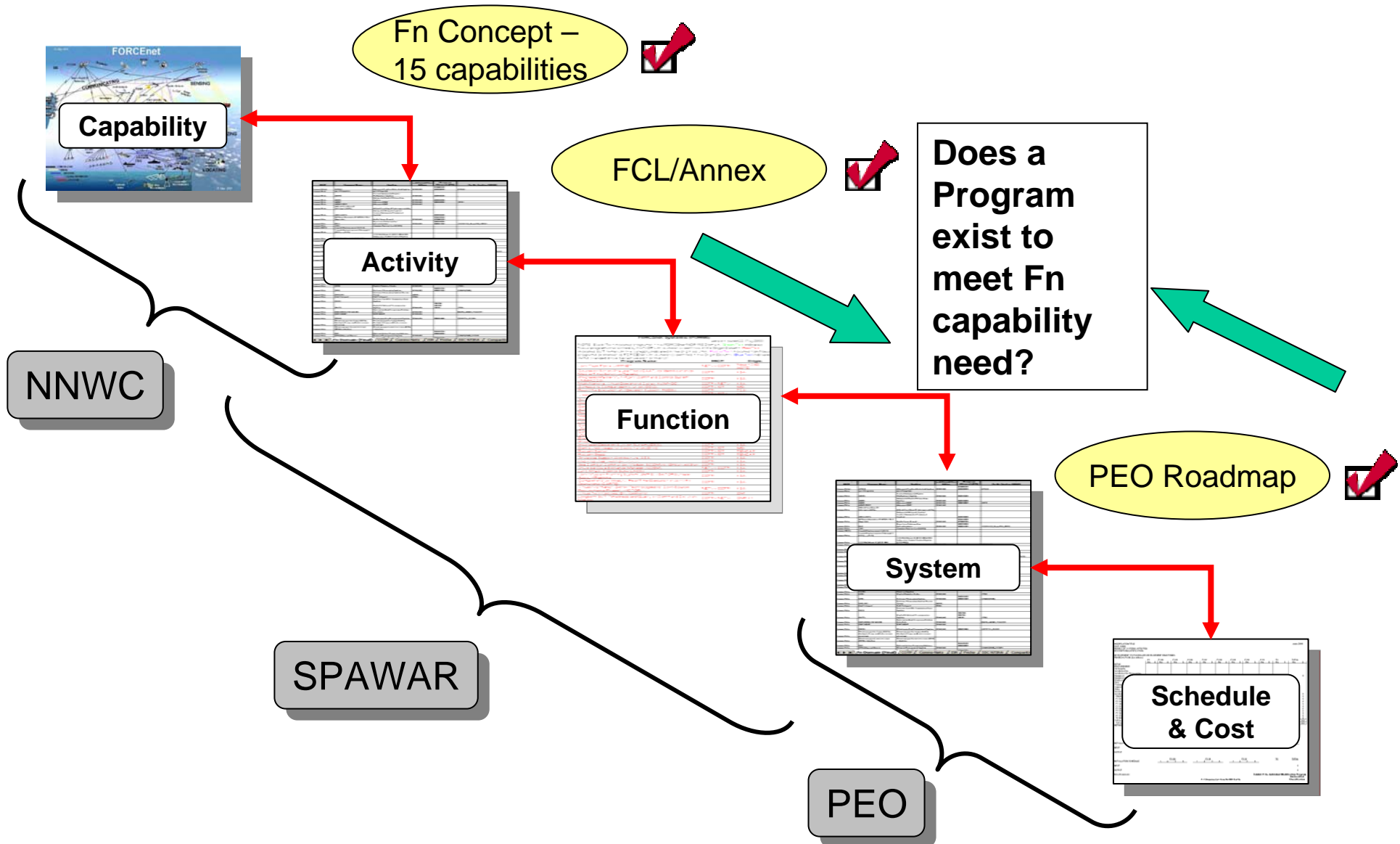


FORCEnet Requirements in the JCIDS process





Capabilities-to-Systems Mapping



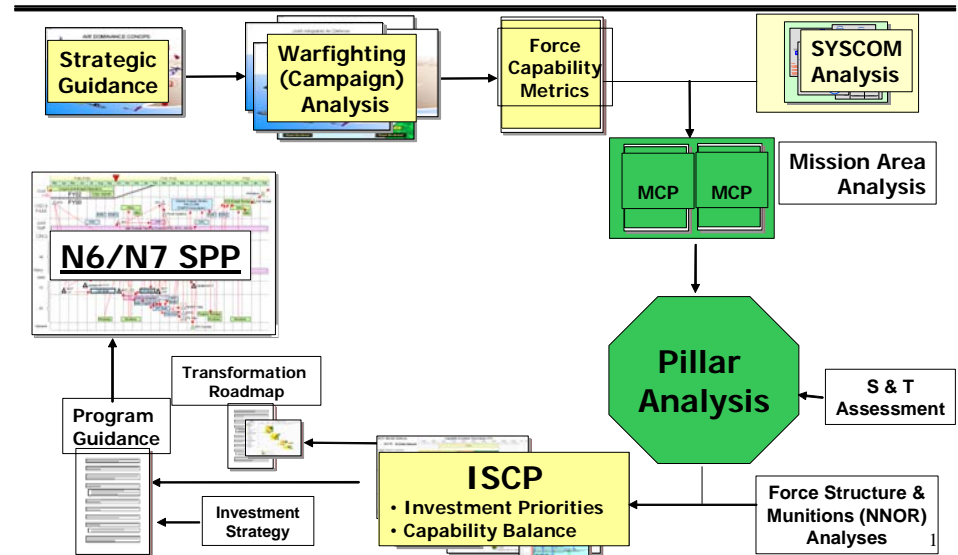


FORCEnet Resource Requirements

- ❖ Implementation of FORCEnet requires an integrated set of capability-based programs
- ❖ While the concept of FORCEnet is an overarching architecture, that architecture is made up of individual, *separately funded* programs
- ❖ NCDP is the process for getting the correct mix of resources to meet FORCEnet requirements – the TRIAD must influence the prioritization efforts of this process



Naval Capabilities Development Process





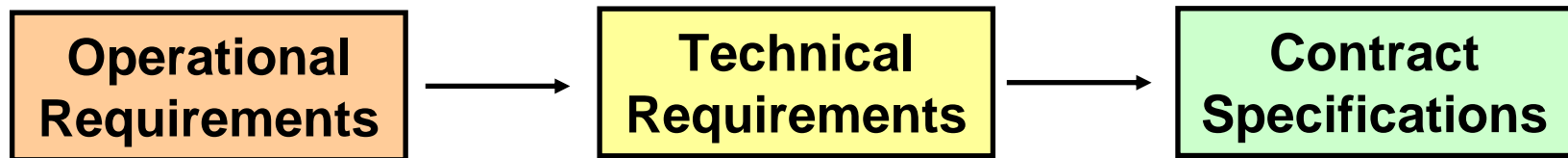
Fleet Feedback

- ❖ Capability generation/acquisition processes are circular rather than linear
 - As the environment changes, the Fleet assesses where there are gaps in mission capabilities
 - Evolutionary acquisition strategies enable programs to develop, test and field in multiple increments to gain full benefit of user feedback, new technology, etc
- ❖ Fleet feedback loop is less formalized than other steps in process
 - Fleet OAGs
 - Formal Naval messages
 - Readiness metrics

Fleet Feedback is important to the Acquisition community, but not *actionable* until it is backed by JCIDS/resources



Technical Requirements



- ❖ Operational requirements get translated in the systems engineering process into specific, detailed technical requirements
- ❖ Programs use multiple sources of guidance to develop specific technical requirements (e.g., KPPs, Functional specs, etc)
 - **FORCEnet Tech Ref Guide**
 - **FORCEnet A&S**
 - **NESI**
- ❖ Programs then must hold their contractors to meeting these technical requirements by explicitly defining the specs in contracting artifacts (e.g., RFPs, SOWs, CDRLs, etc)
- ❖ Technical requirements are reviewed and assessed as part of the acquisition cycle during PDRs, CDRs and DRRs



Development and Procurement Requirements – NESI guidance

- ❖ Net-Centricity and Open Architecture principles must be included in all documents that support Milestone Decisions.

- Acquisition Strategy
- Information Support Plan
- System Engineering Plan

- ❖ MDA will consider program compliance with Net-Centric requirements during all formal program and milestone reviews

- ❖ Developing compliance and briefing tool to assist programs at milestone decisions.

❖ Example:

- **Acquisition Strategy: Address the program's plan for implementing component-based N-tier framework for reuse of software components that can be easily composed into new mission capabilities with minimal development effort**

- ❖ NESI volume 6 provides guidance incorporating requirements into acquisition process



NESI Policy Memo

- ❖ On August 5, 2005, Mr. Dennis Bauman signed a PEO C4I policy memo mandating that “All programs designated as **FORCEnet Category 3 (Refresh) or 4 (New Start)**, engaging in future development, migration or significant software maintenance efforts shall adhere to the NESI development standards and ensure the appropriate components are included in **system development contracts and program documentation.**”
- ❖ NESI is defined as technical and acquisition implementation guidance for building information systems conforming to the Net-Centric Warfare (NCW) environment

NESI is how PEO C4I ensures its programs are meeting FORCEnet and Open Architecture criteria



Modernization Process Requirements

- ❖ SHIPMAIN process enables Fleet prioritization of requirements utilizing a voting process to determine whether alt should be funded and installed
 - Alterations evaluated in a phased process, which reviews concept design and development, integration, and execution feedback and reporting
 - Phases are being aligned with the Acquisition milestones and Budgeting processes
 - Specific to the Surface and Carrier communities

- ❖ C5IMP Baseline
 - Tracks install documentation requirements (SID/ SCD/ ILS), and system inter-dependencies, forecasting ships to be on track with installation and emergency surge readiness



Harmonizing the Requirements

- ❖ **FORCEnet Requirements/Capabilities and Compliance Policy - OPNAV**
 - **Supports NCDP by providing validated FORCEnet compliance criteria for program assessment, and supports JCIDS by ensuring that FORCEnet-related Joint/OSD and Navy directives and standards are captured in JCIDS documentation**
- ❖ **FORCEnet Capabilities List (FCL) – NNWC**
 - **Decomposes 15 FORCEnet capabilities defined in Fn Concept into major tasks, associated attributes and examples of possible measures to help guide capability development**
- ❖ **NCW Roadmap – PEO C4I**
 - **Effort to map systems to required capabilities across FYDP, platforms, etc**
- ❖ **FORCEnet/Open Architecture Standards alignment**
 - **Effort to consolidate standards guidance to provide one set of technical requirements**



Summary

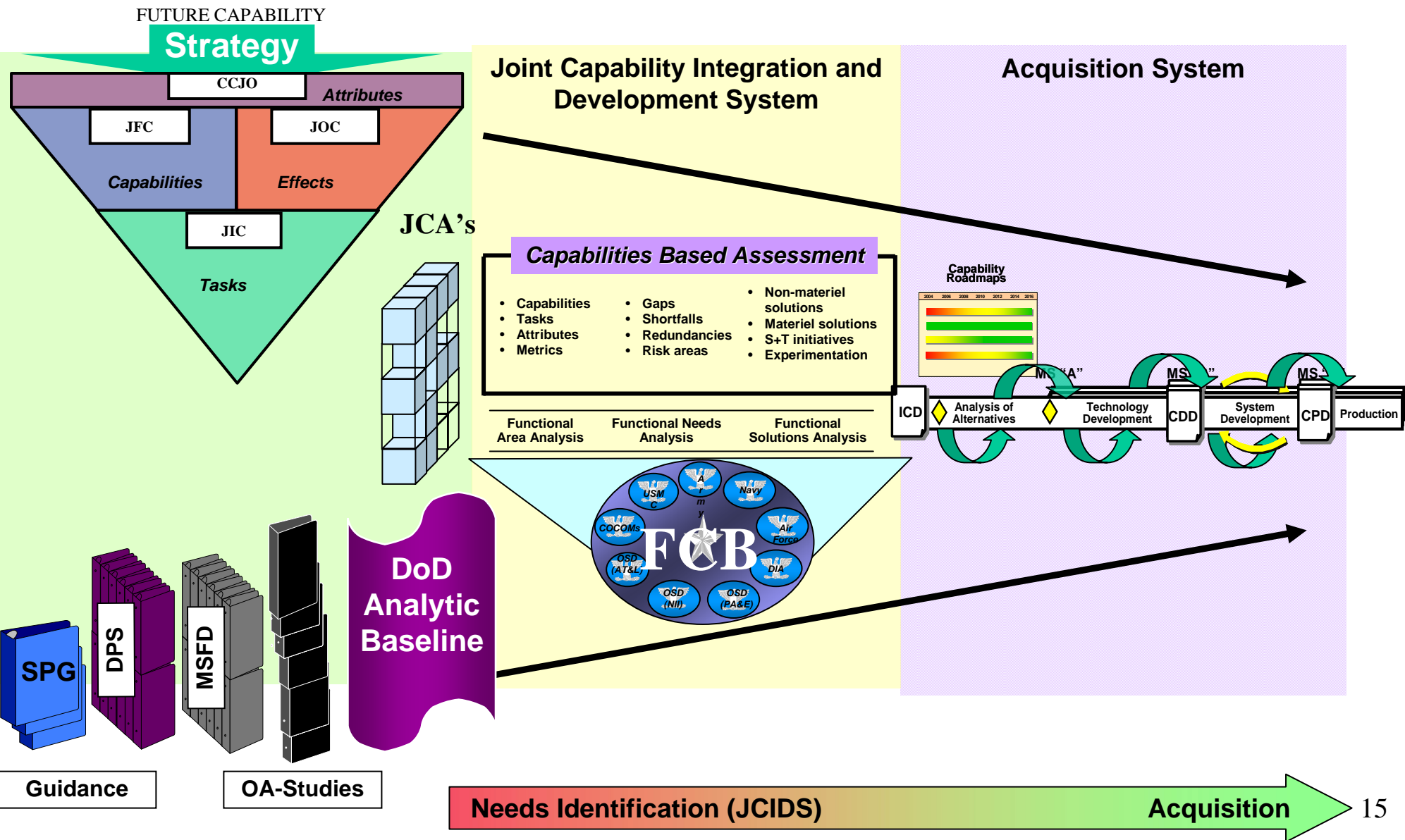
- ❖ FORCEnet itself is not a program – it requires an integrated set of capabilities-based programs to make up the Family of Systems and Systems of Systems
- ❖ Going forward, we must ensure that we are aligned with Joint requirements through the JCIDS process
- ❖ TRIAD collaboration is key – we need to ensure we have a common vision and use standard language for describing programs and capabilities

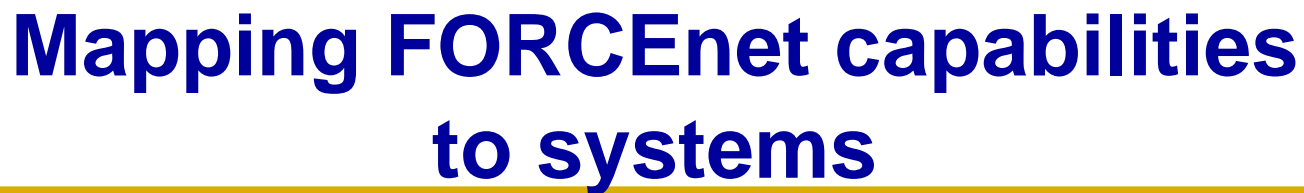


BACKUP



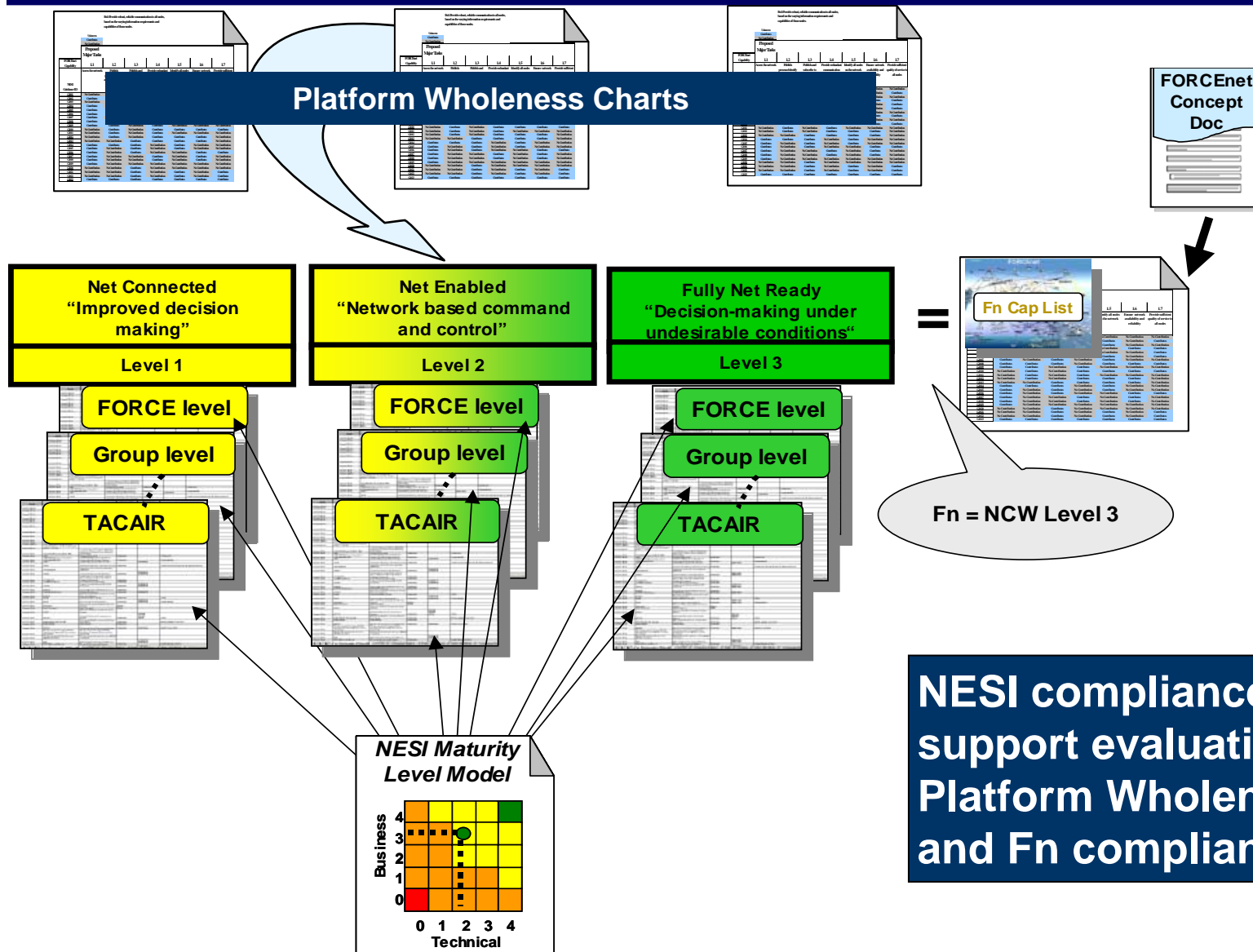
Strategy to Procurement







Tie between Platform Wholeness, FCL and NCW levels





FORCEnet / NESI Relationship

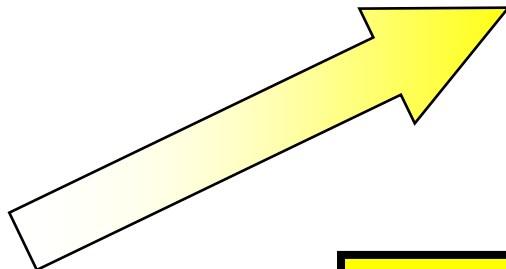
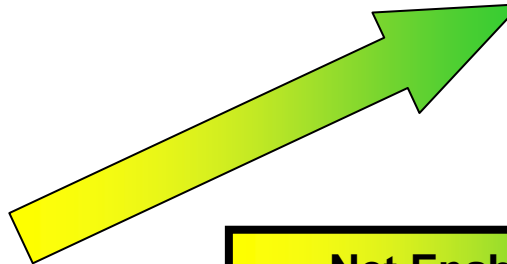
- ❖ FORCEnet is the Navy's primary effort to integrate operational entities and provide a single architectural framework for Net-centric Warfare = **"What"**
 - Joint (GIG, NCES, SIAP, ASD NII NCC Checklist, etc)
 - Other services (Army Enterprise Architecture, C2 Constellation)

- ❖ NESI is PEO C4I's implementation guidance, technical criteria and reusable software components for program execution = **"How"**
 - Sibling of PEO IWS's Open Architecture (OA) Design Guidance
 - These two guidance documents are being converged into one authoritative set of Net-centric Warfare implementation guidance for the Navy



Capability Stepping Stones to Fn

**Based on Fn
Concept
Document**



Full IT21
“Online”

- IP Reach Back
- Local Area Networks
- Wideband Receive
- RF Management
- Survivable comms

Level 0

Today

Net Connected
“Improved decision making”

- Web-based services
- Improved network reliability and performance
- Increased bandwidth
- Improved coalition operations and data sharing
- Tailorable situational awareness tools
- Standardized data exchange between domains
- Defense in depth

Level 1

FY07

Net Enabled
“Network based command and control”

- Multi-path and improved transport reliability
- Dynamic bandwidth mgmt
- Customized applications and data sources
- Common infrastructure and data exchange standards
- Improved data exchange across domains
- Enterprise management for asset analysis and repair
- Initial knowledge management and automated decision aids
- Assured sharing
- Distributed command and control operations
- Modular and open architecture

Level 2

FY10

Fully Net Ready
“Decision-making under undesirable conditions”

- Robust, reliable communication to all nodes
- Reliable, accurate and timely information on friendly, environmental, neutral and hostile units
- Storage and retrieval of authoritative data sources
- Robust knowledge management capability with direct access ability to raw data
- User-defined and shareable SA
- Distributed and collaborative command and control
- Automated decision aids to enhance decision making
- Information assurance
- Seamless cross-domain access and data exchange.
- Interoperability across all domains and agencies
- Autonomous and disconnected operations
- Automatic and adaptive diagnostic and repair
- Modular architecture to expedite new capabilities

Level 3

FY14



Assessments and Evaluation

❖ FORCEnet Integrated Tool Suite (FITS)

- Tool being designed to leverage Program data as well as Integrated Architectures, Standards, Capabilities, etc
- Will pull from authoritative sources, supplemented by PM data input
- Will be used by the FET to conduct FORCEnet assessments

❖ Modernization

- Integrated, consolidated fielding plans
- Complete cost guides for procurement and installation
- System dependencies matrix
- Supporting Fleet readiness metrics

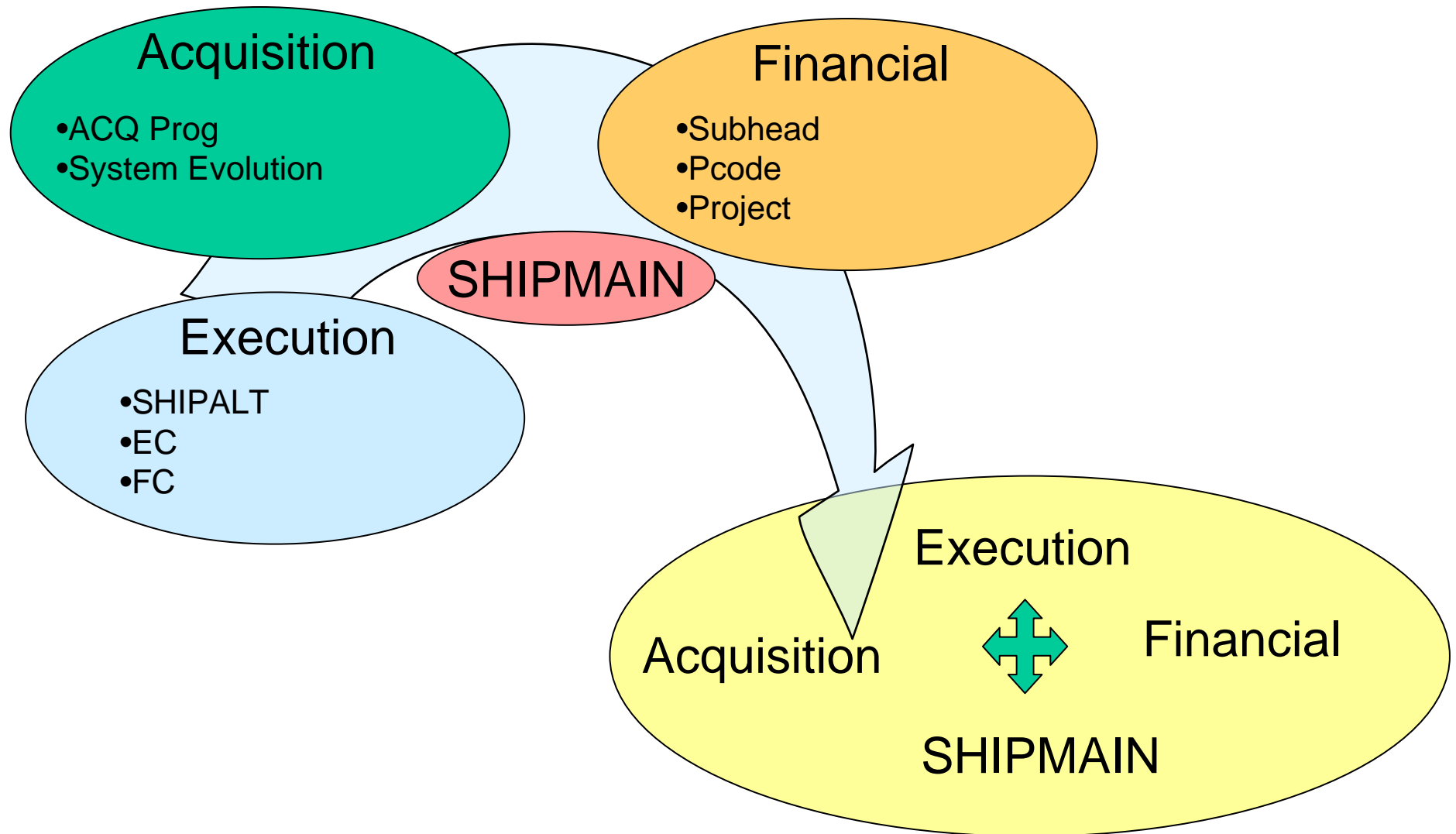


Top Level Guidance

- ❖ **NCW Campaign Plan effort underway – objectives:**
 - **Establish process to define NCDP, Fn Capability List and NCW Roadmap relationship**
 - **Identify Key NCW Capabilities**
 - Define Capability increments to CSG/ESG and Platform levels
 - **Map capabilities to System Increments**
 - **Lay groundwork to enable modeling of NCW Levels**
- ❖ **FCCC**
 - **OPNAV checklist to ensure that Program JCIDS docs are FORCEnet compliant**
 - **Reference for PMs to ensure their programs are considering all applicable guidance when developing/acquiring systems**
- ❖ **FORCEnet Policy for Acquisition Community**
 - **Defines roles and responsibilities in the area of FORCEnet acquisition**



Challenges





Challenges

- ❖ Establishment of a common naming convention to discuss systems
- ❖ Acquisition, Financial, Engineering and Execution communities all reference systems differently
- ❖ Must resolve to allow Capability analysis across our Modernization plans

C4I Modernization Data Structure

